

### ABSTRACT

Wideband speech signals must be converted to narrowband speech signals if the transmission medium or the destination terminal is constructed with narrowband constraints. A typical wideband-to-narrowband conversion method is the elimination of frequencies above 3400 Hz using a low pass filter and a down sampler. However, this method produces a muffled speech sound since the resulting narrowband signal has a flat frequency response. Methods and apparatus are presented herein to enhance the acoustic quality of a wideband-to-narrowband converted signal. A bandwidth switching filter is used to emphasize a mid-range frequency portion of the wideband signal so that the resulting narrowband signal has a non-flat frequency spectrum.